WHAT IS CLAIMED IS:

1. A data transmission/reception apparatus for performing a data transfer by a pipeline technique between a first predetermined number of processing means each capable of performing a data process, the first predetermined number being two or more, comprising:

a second predetermined number of intermediary means for interconnecting first data processing means and second data processing means and allowing data obtained through the data process performed by the first data processing means to be transmitted to the second data processing section, wherein the first data processing means and second data processing means are adjoining data processing means, the second predetermined number being smaller by one than the first predetermined number,

wherein,

the first data processing means includes transmission means for providing connection to the intermediary means to transmit the data to the second data processing means,

the second data processing means includes reception means for providing connection to the intermediary means to receive the data transmitted from the first data processing means, and

the intermediary means includes:

transmission/reception control means for controlling the data transmission/reception; and

a buffer for temporarily storing the data.

2. The data transmission/reception apparatus according to claim 1, wherein,

the transmission means includes writing means for acquiring an address in the buffer at which no data is retained and performing a data write at the address, and

the reception means includes reading means for acquiring an address in the buffer at which some data is retained and reading the data at the address.

3. The data transmission/reception apparatus according to claim 1, wherein,

the first predetermined number of data processing means comprise at least one data processing means selected from the group consisting of active processing means and passive processing means, wherein the active processing means is capable of operating independently of another and the passive processing means operates in synchronization with another,

the intermediary means includes data queue generation determination means for determining whether or not to generate a data queue by detecting whether each of the first data processing means and the second data processing means is an active processing means or passive processing means, and

when the data queue is not to be generated, the

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intermediary means allows the second data processing means to receive data as soon as a data transmission request from the first data processing means is received.

5   4. The data transmission/reception apparatus according to claim 3, wherein the data queue is not to be generated if the first data processing means and the second data processing means operate in a same task or thread.

10   5. The data transmission/reception apparatus according to claim 3 or 4, wherein the data transmission request and the data reception request are the same irrespective of whether the data queue is to be generated or not.

15   6. The data transmission/reception apparatus according to any of claims 1 to 5, wherein,

           the second predetermined number is equal to or greater than two, and

           the second predetermined number of intermediary means

20 perform an identical function.

           7. A data transmission/reception method for realizing a data transmission in the data transmission/reception apparatus according to claim 1, comprising:

25   a first connection step of connecting the first data

processing means to the intermediary means;

a second connection step of connecting the second data processing means to the intermediary means;

an unrecorded address acquisition step of acquiring a first address in the buffer at which no data is retained;

a transmissions step of writing the data from the first data processing section at the first address;

a recorded address acquisition step of acquiring a second address in the buffer at which some data is retained; and

a reception step of reading the data retained at the second address.

8. The data transmission/reception method according to claim 7 for realizing a data transmission in the data transmission/reception apparatus according to claim 3, further comprising:

an active/passive determination step of determining whether each of the first data processing means and the second data processing means is an active processing means or passive processing means;

a data queue generation determination step of determining whether or not to generate a data queue based on a result of the determination by the active/passive determination step; and

a first transmission/reception control step of, when

the data queue is not to be generated, allowing the second data

processing means to receive data as soon as a data transmission

request from the first data processing means is received.

5   9. The data transmission/reception method according to

claim 8, further comprising a second transmission/reception

control step of, when the data queue is not to be generated, allowing

the second data processing means to receive data as soon as a data

transmission request from the first data processing means is

10   received.

10. The data transmission/reception method according

to claim 8, wherein the data queue is not to be generated if the

first data processing means and the second data processing means

15   operate in a same task or thread.

11. A recording medium having recorded thereon a computer

program for executing the data transmission/reception method

according to any of claims 7, 8, 9, and 10.